



Permit to Construct or Modify an Air Contaminant Source Issued Pursuant to Tennessee Air Quality Act

Date Issued: July 11, 2016

Date Amended: August 16, 2016

Date Expires: July 11, 2018

AMENDMENT 1

Permit Number:

971615P

Issued To:

Proton Power, Inc.

Installation Address:

210 Sam Rayburn Parkway
Lenoir City

Installation Description:

Biomass to Gas Conversion using

01: Crumbler

05: ¹CHyP Test Unit with Flare

¹Cellulose to Hydrogen Power –
renewable energy unit that produces inexpensive
hydrogen on demand from biomass and waste sources

Emission Source Reference No.

73-1117

The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations (TAPCR).

CONDITIONS:

1. The application that was utilized in the preparation of this permit is dated April 25, 2016, and is signed by Sam Weaver, President, for the permitted facility. If this person terminates employment or is reassigned different duties and is no longer the responsible person to represent and bind the facility in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification shall be in writing and submitted within thirty (30) days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the facility in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

TAPCR 1200-03-09-.03(8)

(conditions continued on next page)


TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

NON-TRANSFERABLE

POST AT INSTALLATION ADDRESS

Tennessee Air Pollution Control Regulations
Emission Limitations
Source Specific Conditions

Source ID 01: Crumbler Operation

Dried biomass will be passed through a crumbler for uniform size reduction prior to being fed into the CHyP test unit.

2. The stated design input capacity for this source is 200 lbs/hr. The Technical Secretary may require the permittee to prove compliance with this rate. TAPCR 1200-03-09-.01(1)(d) and the application dated April 25, 2016
3. Particulate Matter (PM) emitted from this source shall not exceed 0.86 lbs/hr. This emission limitation is established pursuant to Rule 1200-03-07-.03(1) of Tennessee Air Pollution Control Regulations.

Source ID 05: CHyP Test Unit

The biomass is converted to CHyP gas and biochar. The gas produced in the test unit will be flared outside the building. The biochar will be collected and further tested for quality purposes.

4. Emissions from this source shall not exceed those outlined in Table 1 below.
Table 1: CHyP Test Unit Emissions

Emission Limitations (lb/hr)			
PM	NO _x	CO	VOC
1.38	0.15	0.71	1.31

TAPCR 1200-03-06-.02(2) for PM

TAPCR 1200-03-07-.07(2) for NO_x, CO and VOC

Compliance Method

The flare shall be installed to ensure that it is operated and maintained in conformance with its design. It shall be continuously monitored to ensure a flame is present using the temperature indicators to the system. Maintenance and inspection records shall be recorded in a suitable permanent form and kept available for inspection by the Technical Secretary or his representative. These records must be retained for a period of not less than two (2) years. All maintenance activities (including any ongoing maintenance that has not been completed) shall be entered in the maintenance log no later than seven (7) days following the start of the maintenance.

TAPCR 1200-03-10-.02(2)(a)

Tennessee Air Pollution Control Regulations
General Requirements

5. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.01(1) and TAPCR 1200-03-05-.03(6)
6. Visible emissions from roads and parking areas shall not exhibit greater than ten percent (10%) opacity as determined by Tennessee Visible Emission Evaluation (TVEE) Method 1, as adopted by the Tennessee Air Pollution Control Board on April 29, 1982, as amended on September 15, 1982 and as amended on August 24, 1984. TAPCR 1200-03-08-.03

7. Fugitive dust emissions from this facility shall be controlled as specified in Rule 1200-03-08-.01. Specifically, no person shall cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five (5) minutes per hour or twenty (20) minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20. Fugitive emissions from this source shall be determined by Tennessee Visible Emissions Evaluation Method 4 as adopted by the Tennessee Air Pollution Control Board on April 16, 1986.
8. Upon the malfunction/failure of any emission control device(s) serving this source, the operation of the process(es) served by the device(s) shall be regulated by Chapter 1200-03-20 of the Tennessee Air Pollution Control Regulations.
9. The permittee shall comply with all applicable state and federal air pollution regulations. This includes, but is not limited to, federal regulations published under 40 CFR 63 for sources of hazardous air pollutants and 40 CFR 60, New Source Performance Standards. TAPCR 1200-03-09-.03(8)
10. This source shall construct in accordance with the terms of this permit and the information submitted in the approved permit application dated April 25, 2016. TAPCR 1200-03-09-.01(1)(d)
11. This permit is valid only at this location. TAPCR 1200-03-09-.03(6)
12. The permittee shall apply for an operating permit within thirty (30) days of initial start-up of this emission source. If construction of the source cannot be completed and an operating permit application filed with the Technical Secretary by the expiration date of this permit, a permit extension request must be submitted in writing at least thirty (30) days prior to the permit expiration date. The application for an operating permit shall be submitted to the East Tennessee Permit Program at the address listed below or via email. TAPCR 1200-03-09-.02(1) and (3)

East Tennessee Permit Program
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15TH Floor
Nashville, TN 37243

OR

Adobe Portable Document Format (PDF)
Copy to: Air.Pollution.Control@tn.gov

13. This permit shall serve as a temporary operating permit from the date of issuance to the receipt of a standard operating permit, provided that the conditions of this permit and any applicable emission standards are met.
TAPCR 1200-03-09-.02(2)
14. The permittee shall certify the start-up date of the air contaminant source regulated by this permit by submitting **A COPY OF ALL PAGES OF THIS PERMIT,** with the information required in A) and B) of this condition completed, to the Technical Secretary's representatives listed below:

A) DATE OF START-UP: _____ / _____ / _____
month day year

B) Anticipated operating rate: _____ percent of maximum rated capacity

For the purpose of complying with this condition, “start-up” of the air contaminant source shall be the date of the setting in operation of the source for the dispensing of product for sale.

The undersigned represents that he/she has the full authority to represent and bind the permittee in environmental permitting affairs. The undersigned further represents that the above provided information is true to the best of his/her knowledge and belief.

Signature		Date
Signer's name (type or print)	Title	Phone (with area code)

Note: This certification is not an application for an operating permit. At a minimum, the appropriate application form(s) must be submitted requesting an operating permit. The application must be submitted in accordance with the requirements of this permit.

The completed certification shall be delivered to the East Tennessee Permit Program at the address listed below, no later than thirty (30) days after the air contaminant source is started-up.

East Tennessee Permit Program
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15TH Floor
Nashville, TN 37243

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TAPCR 1200-03-09-.02(3)(b)

(end of conditions)

The permit application gives the location of this source as 35.888587 Latitude and -84.344142 Longitude.

Amendment 1:

Separated Source 01 into two (2) sources.